IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A method for ~~deriving~~ optimizing the sharpening of a video sequence using an objective sharpness quality score derived from an objective sharpness metric for determining the sharpness quality level of video sequences having different degrees of sharpness, said method comprising the ~~following~~ steps of:

receiving as an input an original video sequence;

processing the original video sequence to derive a ~~sharpness~~ sharpened video sequence;

calculating spectral energy information in said sharpened video sequence ~~for which a sharpness quality score is desired~~;

calculating spectral energy information in said original video sequence;

calculating false edge information data in said sharpened video sequence; ~~and~~

deriving said objective sharpness metric from said spectral energy information and said false edge information, said objective sharpness metric providing ~~an~~ said objective sharpness quality score representative of the quality of said sharpened video sequence; and

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re-processing the original video sequence using said objective sharpness quality score to derive an optimized sharpened video sequence.

2. (Currently Amended) The method ~~of~~ as claimed in claim 1, wherein the step of calculating false edge information in said sharpened video sequence further comprises calculating a total number of false edges in said sharpened video sequence.

3. (Currently Amended) The method ~~of~~ as claimed in claim 2, wherein said step of ~~calculating the total number of false edges in said sharpened video sequence~~deriving said optimized sharpness metric comprises the sub-steps of:

determining whether said number of false edges exceeds a first threshold; and

computing said sharpness quality score from said spectral energy information and said total number of false edges.

4. (Currently Amended) The method ~~of~~ as claimed in claim 2, wherein the step of calculating said total number of false edges in said sharpened video sequence, further comprises the sub-steps of:

creating a first edge map in said original video sequence;

creating a second edge map in said sharpened video sequence; and

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comparing said first and second edge maps to determine said total number of false edges in said sharpened video sequence.

5. (Currently Amended) The method ~~of~~ as claimed in claim 1, wherein the step of calculating spectral energy information in said original sequence further comprises the sub-steps of:

determining the frequency spectrum of said original video sequence; and

computing a normalized ~~fourier~~ Fourier transform of said original video sequence from said frequency spectrum.

6. (Currently Amended) The method ~~of~~ as claimed in claim 1, wherein the step of calculating spectral energy information in said sharpened sequence further comprises the sub-steps of:

determining the frequency spectrum of said sharpened video sequence;

dividing the frequency spectrum into at least a first and a second sub-band;

computing a first normalized ~~fourier~~ Fourier transform of said sharpened video sequence in said at least first sub-band;

computing a second normalized ~~fourier~~ Fourier transform of said sharpened video sequence in said at least second sub-band; and

using said first and second normalized ~~fourier~~ Fourier transforms to derive said objective sharpness metric.

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7. (Currently Amended) The method ~~of~~ as claimed in claim 6, wherein the first and second ~~fourier~~ Fourier transforms are one of a horizontal and vertical transform.

8. (Currently Amended) A system for optimizing the sharpness quality level of a received video sequence, comprising:

means for receiving an original video sequence; ~~and~~

~~a processor comprising:~~

means for applying a sharpness enhancement function to said original video sequence to generate a sharpened video sequence;

a processor for deriving an objective sharpness metric, said processor comprising:

means for calculating spectral energy information indicative of the sharpened video sequence;

means for calculating spectral energy information in said original video sequence;

means for calculating false edge information data in said sharpened video sequence; and

means for deriving said objective sharpness metric from said spectral energy information and said false edge information, said objective sharpness metric providing an objective

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sharpness quality score representative of the quality of said sharpened video sequence; and

means for optimizing the sharpness quality level of said received video sequence using ~~at least spectral energy information indicative of the sharpened video sequences~~said objective sharpness metric.

9. (Cancelled).

10. (Currently Amended) A computer-readable medium comprising instructions which when executed on a processor, cause the processor to perform a method for deriving an objective sharpness metric for determining the sharpness quality level of video sequences having different degrees of sharpness, the method comprising the ~~following~~ steps of:

receiving as an input an original video sequence;

processing the original video sequence to derive a sharpness video sequence;

calculating spectral energy information in said sharpened video sequence for which a sharpness quality score is desired;

calculating spectral energy information in said original video sequence;

calculating false edge information data in said sharpened video sequence; and

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deriving said objective sharpness metric from said spectral energy information and said false edge information, said objective sharpness metric providing an objective sharpness quality score representative of the quality of said sharpened video sequence.

11. (Currently Amended) The computer-readable medium ~~of~~ as claimed in claim 10, wherein the step of calculating false edge information in said sharpened video sequence further comprises calculating a total number of false edges in said sharpened video sequence.

12. (Currently Amended) The computer-readable medium ~~of~~ as claimed in claim 11, wherein said step of ~~calculating the total number of false edges in said sharpened video sequence~~deriving said optimized sharpness metric comprises the sub-steps of:

determining whether said number of false edges exceeds a first threshold; and

computing said sharpness quality score from said spectral energy information and said total number of false edges.

13. (Currently Amended) The computer-readable medium ~~of~~ as claimed in claim 11, wherein the step of calculating said total

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number of false edges in said sharpened video sequence, further comprises the sub-steps of:

creating a first edge map in said original video sequence;

creating a second edge map in said sharpened video sequence; and

comparing said first and second edge maps to determine said total number of false edges in said sharpened video sequence.

14. (Currently Amended) The computer-readable medium ~~of~~ as claimed in claim 10, wherein the step of calculating spectral energy information in said original sequence further comprises the steps of:

determining the frequency spectrum of said original video sequence; and

computing a normalized ~~fourier~~ Fourier transform of said original video sequence from said frequency spectrum.

15. (Currently Amended) The computer-readable medium ~~of~~ as claimed in claim 10, wherein the step of calculating spectral energy information in said sharpened sequence further comprises the sub-steps of:

determining the frequency spectrum of said sharpened video sequence;

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dividing the frequency spectrum into at least a first and a second sub-band;

computing a first normalized ~~fourier~~ Fourier transform of said sharpened video sequence in said at least first sub-band;

computing a second normalized ~~fourier~~ Fourier transform of said sharpened video sequence in said at least second sub-band; and

using said first and second normalized ~~fourier~~ Fourier transforms to derive said objective sharpness metric.

16. (Currently Amended) The computer-readable medium ~~of~~ as claimed in claim 15, wherein the first and second ~~fourier~~ Fourier transforms are one of a horizontal and vertical transform.

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